

## REVISION OF THE GENUS MASDEVALLIA - I.

HERMAN R. SWEET

The members of the genus *Masdevallia* have been in constant demand during recent years. The genus is comprised of some 400 species, most of which are poorly known, and those in cultivation frequently misidentified. Several years ago I started a complete revision of the genus, and this paper is the first step towards its finalization.

In 1925 Kränzlin published a monograph of the genus *Masdevallia* which in reality was an updated version of THE GENUS *MASDEVALLIA* by Miss Florence H. Woolward, originally published in 1896. The best part of Kränzlin's monograph is his principal division of the genus into 14 sections. Here Kränzlin demonstrated again, just as he had done with the genus *Oncidium*, his ability to recognize natural groups. At the same time he raised havoc with the assignment of individual species into sections, a pattern quite uniform in all of his monographic studies.

The first section taken up in this series is *Triotosiphon* proposed by Schlechter in 1922, but overlooked by Kränzlin. It was chosen purposely for it clearly reflects the taxonomic status of the genus as a whole. Some of the species now assigned to this section have been transferred to the genus *Physosiphon*. Admittedly, the technical distinction between *Masdevallia* and *Physosiphon* rests primarily in the calliferous petals in *Masdevallia*; this particular character also differentiates *Masdevallia* from the other genera of *Pleurothallidinae*.

Because of the great similarity in gross morphology that often exists among species belonging to the same section, it became mandatory to dissect and draw every type specimen in order to understand the true characters of their morphology.

When Schlechter chose the sectional name *Triotosiphon* — translated as a tube having three ears — he emphasized the

nature of the flat but free sepaline lobes. Yet I believe that the emphasis should be on the dorsally ventricose tube which at once separates it from the Section *Tubulosae*.

The Section *Triotosiphon* contains eight species of which six are new to science. Surprisingly I have seen no material from Colombia or Peru, yet plants have been reported from Venezuela, Ecuador and Bolivia.

### Section *Triotosiphon* (Schltr.) Sweet, comb. nov.

Basionym: *Masdevallia* subgen. *Triotosiphon* Schltr. in Fedde, Rep. Beih. 10: 42, 1922.

Type: ***Masdevallia Bangii* Schltr.**

Small, epiphytic plants, densely caespitose. Roots filiform, flexuous, glabrous. Secondary stem very short, completely enclosed by tubular, imbricating sheaths. Leaves coriaceous, very narrow. Inflorescence very slender, one-flowered. Flowers rather small, yellow. Sepals connate into a dorsally ventricose tube, suberect to arcuate, terminated by 3, free lobes; lobes fleshy, more or less spreading, ear-like, hence the sectional name, ecaudate. Petals, lip and column typical for the genus.

### KEY TO SPECIES

1. Lip distinctly 3-lobed ..... 2
- 1a. Lip entire ..... 4
2. Sepaline lobes ovate, obtuse; petals acute; lateral lobes of lip falcate-triangular ..... ***M. trioon***
- 2a. Sepaline lobes lanceolate to narrowly ovate-lanceolate, acute; petals subtruncate, apiculate ..... 3
3. Lateral lobes of lip obliquely triangular, obtuse; terminal lobe of lip ovate-rhombic; 3-dentate; disc glabrous ..... ***M. Bangii***
- 3a. Lateral lobes of lip semi-elliptic; terminal lobe of lip cuneate-subquadrate, erose-denticulate; disc at junction of terminal and lateral lobes on each side with an obliquely inserted, semilunate callus ..... ***M. Lansbergii***
4. Flowers arcuately curved; sepaline lobes triangular-lanceolate, sub-acuminate; petals spatulate; lip with a pair of low ridges ..... 5
- 4a. Flowers suberect; sepaline lobes ovate-lanceolate to linear-oblong, acute to obtuse; petals linear-oblong; lip without ridges ..... 6
5. Sepaline lobes 8 mm. long; ridges of lip glabrous ... ***M. kyphonantha***
- 5a. Sepaline lobes 4 mm. long; ridges of lip pubescent . ***M. pseudominuta***
6. Petals linear with a longitudinal, keel-like callus..... 7

- 6a. Petals dolabiform with globose calli; sepaline lobes 5 mm. long ..... **M. gnoma**
- 7. Sepaline lobes 5 mm. long; petals with a rounded, obscurely erose apex; lip pandurate ..... **M. irapana**
- 7a. Sepaline lobes 10 mm. long; petals with a subtruncate apex, apiculate in middle; lip linear ..... **M. venezuelana**

**Masdevallia Bangii** Schltr. in Fedde, Rep. Beih. 10: 41, 1922.

Syn.: *Physiphon Bangii* (Schltr.) Garay in Can. Journ. Bot. 34: 249, 1956.

Type: Bolivia; La Paz; Coroico, Ungas, BANG 2424! (AMES).

Epiphytic, caespitose plants, up to 5 cm. tall. Roots fasciculate, flexuous, glabrous. Secondary stem approximate, very thin, up to 2 mm. long, one-leaved. Leaves fleshy, erect, linear-ob lanceolate, obtuse, gradually tapering toward the base, up to 5 cm. long and 3 mm. wide. Inflorescence erect, filiform, one-flowered, commonly shorter than the leaves, up to 2 cm. long. Bracts tubular, much shorter than the petiole, up to 4 mm. long. Flowers delicate, yellowish. Sepals connate into a narrow, dorsally ventricose tube, up to 8 mm. in length, free at apex; lobes lanceolate to narrowly ovate-lanceolate, distinctly carinate dorsally, acute, up to 3 mm. long and 1 mm. wide. Petals obliquely linear-oblong, subtruncate at apex, minutely apiculate in the center, very obscurely callose toward base along anterior margin, up to 2.2 mm. long and 0.6 mm. wide. Lip rather fleshy, from a cordate, oblong-cuneate base 3-lobed; lateral lobes obliquely triangular, obtuse; terminal lobe ovate-rhombic, distinctly 3-dentate at apex, up to 2.2 mm. long and 1 mm. wide. Column short with a three-lobed clinandrium, up to 2 mm. long. Ovary fusiform, articulate with the pedicel, up to 10 mm. long.

**Bolivia:** La Paz; Coroico, Yungas, BANG 2424! (AMES, US).

**Masdevallia gnoma**, Sweet, sp. nov.

Type: Ecuador; Prov. Napo, vicinity of Papallacta, STACY s.n.! (AMES).

Epiphytica, minuta, usque ad 2.5 cm. alta; radicibus fasciculatis, flexuosis, glabris; caulibus secundariis vix ullis, vag-

inis 2, alte amplectentibus omnino obtectis; foliis carnosis, linear-i-ob lanceolatis, acutis, basin versus sensim angustatis, usque ad 2 cm. longis, 2 mm. latis; inflorescentia capillari, uniflora, usque ad 1 cm. longa; floribus suberectis, parvis, luteis vel luteo-viridibus; bracteis tubulosis, usque ad 2 mm. longis; sepalis tubulosis, dorsaliter ventricosis, usque ad 5 mm. longis, lobis liberis, ovato-lanceolatis, acutis, usque ad 4.5 mm. longis, 1 mm. latis; petalis inaequaliter dolabriformibus, apice truncatis, in medio prominenter apiculatis, lamina antice expansa, globoso-callosa, usque ad 2 mm. longis, 0.5 mm. latis; labello oblongo-ligulato, antice subtruncato, margine erosulo; disco lamellis triangulis ornato; toto labello usque ad 2.2 mm. longo, 0.8 mm. lato; columnna abbreviata, clavata, usque ad 2 mm. longa; ovario cylindrico, usque ad 2.5 mm. longo.

Epiphytic, minute plants, up to 2.5 cm. tall. Roots fasciculate, flexuous, glabrous. Secondary stem very short, completely enclosed by two loose-fitting, scarious sheaths, up to 2 mm. long. Leaves fleshy, linear-ob lanceolate, acute, tapering toward the base, up to 2 cm. long and 2 mm. wide. Inflorescence slender, one-flowered, up to 1 cm. long. Flowers suberect, small, greenish yellow to yellow. Bracts tubulose, up to 2 mm. long. Sepals connate into a dorsally ventricose tube, 5 mm. long, free portions ovate-lanceolate, acute, up to 4.5 mm. long and 1 mm. wide. Petals unequally dolabriform, truncate with a prominent, median apicule, the anteriorly expanded blade with a globose callus, up to 2 mm. long and 0.5 mm. wide. Lip oblong-ligulate, subtruncate in front with an erose margin; disc with a pair of elevated triangular lamellae; whole lip up to 2.2 mm. long and 0.8 mm. wide. Column short, clavate, up to 2 mm. long. Ovary cylindric, up to 2.5 mm. long.

**Ecuador:** Prov. Napo; vicinity of Papallacta, STACY s.n.! (AMES).

**Masdevallia irapana** Sweet, sp. nov.

Type: Venezuela; Sucre, Peninsula de Paria, N.E. of Irapa, STEYERMARK 95079! (AMES).

Epiphytica, delicatula, caespitosa, usque ad 4 cm. alta; radicibus fasciculatis, filiformibus, glabris; caulis secun-

dariis abbreviatis, vaginis tubulosis, atro-brunneis omnino ob-tectis, usque ad 5 mm. longis; foliis linear-i-ob lanceolatis, obtusis, carnosis; basin versus sensim subpetiolatis, usque ad 5 cm. longis, 4 mm. latis; pedunculo filiformi, unifloro, usque ad 15 mm. longo; bracteis tubulosis, 1 mm. longis; floribus minutis, flavis vel aurantiacis; sepalis tubulosis, dorsaliter ventricosis, usque ad 5 mm. longis; lobis liberis oblongo-ellipticis, obtusis, usque ad 5 mm. longis, 1.4 mm. latis; petalis linear-i-oblongis, sub apice paulisper constrictis, apice rotundatis, obscure erosis, margine anteriore callo linear i ornata, usque ad 2 mm. longis, 0.3 mm. latis; labello pandurato, dimidio basilari carnoso, subquadrato, concavo, dimidio anteriori e cuneata basi subrotundo, margine erosulo, toto labello usque ad 3 mm. longo, 1.5 mm. lato; columna abbreviata, usque ad 2 mm. longa; ovario cylindrico, usque ad 1 mm. longo.

Epiphytic, delicate, caespitose plants, up to 4 cm. tall. Roots fasciculate, filiform, glabrous. Secondary stem short, completely enclosed by imbricating, tubular, brown-purple sheaths, up to 5 mm. long. Leaves linear-ob lanceolate, obtuse, tapering to a petiolate base, up to 5 cm. long and 4 mm. wide. Peduncle very short, slender, up to 15 mm. long, one-flowered. Bracts tubular, up to 1 mm. long. Flowers small, yellow to orange in color. Sepals united into a dorsally ventricose tube, up to 5 mm. long, free parts narrowly oblong-elliptic, obtuse, up to 5 mm. long and 1.4 mm. wide. Petals linear-oblong, somewhat constricted below the rounded, obscurely erose apex, the anterior margin with a short, linear, longitudinal thickening, up to 2 mm. long and 0.3 mm. wide. Lip pandurate; basal part subquadrate thickened, concave; apical part from a cuneate base subrotund with an erose margin, up to 3 mm. long and 1.5 mm. wide. Column short, up to 2 mm. long. Ovary cylindric, up to 1 mm. long.

**Venezuela:** Sucre, Peninsula de Paria, N.E. of Irapa, STEYERMARK 95079! (AMES, VEN).

**Masevallia Lansbergii** Rchb.f. in Nederl. Kruidk. Arch. 4: 317, 1858.

Syn.: *Physosiphon Lansbergii* (Rchb.f.) L.O. Wms. in Bot. Mus. Leafl. Harv. Univ. 7: 197, 1939.

Type: Venezuela; Caracas, LANSBERG 4! (W).

Epiphytic caespitose plants, up to 7 cm. tall. Roots fasciculate, glabrous. Secondary stem very short, completely enclosed by two tubular sheaths, up to 5 mm. long. Leaves linear-spathulate, obtuse, gradually tapering to base, subpetiolate, up to 7 cm. long and 6 mm. wide, commonly smaller. Peduncle filiform, one-flowered, up to 5 cm. long. Bracts tubular, up to 4 mm. long. Flowers small, yellow. Sepals connate into a dorsally ventricose tube, up to 8 mm. long, free part linear-oblong, acute, up to 8 mm. long and 1.5 mm. wide. Petals linear-oblong, truncate at apex with a small apiculum in middle, slightly tapering toward base, the anterior margin with a small, subglobose callosity above the base, up to 2.5 mm. long and 0.5 mm. wide. Lip 3-lobed, lateral lobes semi-elliptic; terminal lobe cuneate-subquadrate, with an obtuse, subtruncate, erose-denticulate apex, at the junction of the terminal lobe and lateral lobes on each side provided with an obliquely inserted, semi-lunate callus; whole lip up to 3 mm. long and 1 mm. wide. Column short with a distinct foot, cylindric, up to 2 mm. long. Ovary cylindric, up to 2 mm. long.

**Venezuela:** Caracas, LANSBERG 4! (W); Tovar, FENDLER 1369! (AMES)

**Masdevallia kyphonantha**, Sweet, *sp. nov.*

Type: Venezuela; Estado Yaracuy; 7 km. N. of Salom, STEYERMARK 106263! (AMES).

Epiphytica, caespitosa, usque ad 5 cm. alta; radicibus fasciculatis, flexuosis, glabris; caulis secundariis approximatis, valde abbreviatis, vaginis 2, ample tubulosis omnino obtectis, usque ad 4 mm. longis; foliis carnosis, lineari-oblongis, paulisper basin versus attenuatis, obtusis, usque ad 5 cm. longis, 2 mm. latis; inflorescentia capillari, uniflora, usque ad 2.5 cm. longa; bracteis tubulosis, usque ad 4 mm. longis; floribus albidis; sepalis tubulosis, dorsaliter ventricosis, arcuatis, inde nomen, usque ad 18 mm. longis, lobis liberis, lanceolato-triangularibus, subacuminatis, usque ad 8 mm. longis, 3 mm. latis; petalis oblique spathulatis, apice rotundatis, minute mucronatis, margine anteriore in medio callo globoso ornata, usque

ad 3.5 mm. longis, 1.2 mm. latis; labello oblongo-ligulato, antice rotundato vel subtruncato, erosulo, disco longitudinaliter bicarinato, usque ad 5 mm. longo, 2 mm. lato; columna paululo arcuata, subclavata, usque ad 3.5 mm. longa; ovario cylindrico, usque ad 5 mm. longo.

Epiphytic, caespitose plants, up to 5 cm. tall. Roots fasciculate, flexuous, glabrous. Secondary stem approximate, very short, completely enclosed by two, loose-fitting, tubular sheaths, up to 4 mm. long. Leaves fleshy, linear-oblong, somewhat tapering toward the base, obtuse, up to 5 cm. long and 2 mm. wide. Inflorescence very slender, one-flowered, up to 2.5 cm. long. Bracts tubular, as long as the pedicels, up to 4 mm. long. Flowers whitish. Sepals connate into a dorsally ventricose, arcuately curved tube, hence the name, up to 18 mm. long, the free portions lanceolate-triangular, subacuminate, up to 8 mm. long and 3 mm. wide. Petals obliquely spatulate, rounded at apex, minutely mucronate, with an obscurely globose callus near the middle of the anterior margin, up to 3.5 mm. long and 1.2 mm. wide. Lip oblong-ligulate, rounded to subtruncate in front with an erose margin; disc provided with a pair of elevated, longitudinal ridges, up to 5 mm. long and 2 mm. wide. Column slightly arcuate, subclavate, up to 3.5 mm. long. Ovary cylindric, up to 5 mm. long.

**Venezuela:** Estado Yaracuy; 7 km. N. of Salom, STEYER-MARK 106263! (AMES, VEN).

**Masdevallia pseudominuta**, Sweet, *sp. nov.*

Type: Venezuela; Curimagua, Sierra de San Luis, GARCIA s.n. sub DUNSTERVILLE 538! (AMES).

Epiphytica, caespitosa, usque ad 3 cm. alta; radicibus filiformibus, flexuosis, glabris; caulis secundariis valde abbreviatis, seu vix ulla, vaginis imbricantibus, tubulosis obtectis; foliis carnosis, lineari-ob lanceolatis, usque ad 3 cm. longis, 2 mm. latis; pedunculo gracili, unifloro, usque ad 2 cm. longo; bracteis tubulosis, usque ad 3.5 mm. longis; floribus luteis; sepalis tubulosis, dorsaliter ventricosis, arcuatis, 6 mm. longis, lobis liberis, triangulari-lanceolatis, subacuminatis, usque ad 5 mm. longis, 1 mm. latis; petalis oblique spatulatis, obtusis,

obscure apiculatis, margine anteriore in medio obscure subglobosa, usque ad 2 mm. longis, 0.8 mm. latis; labello linearioroblongo, subtruncato, disco longitudinaliter bicarinato, carinis puberulentibus, usque ad 2.5 mm. longo, 0.8 mm. lato; columna abbreviata, clavata, usque ad 2 mm. longa; ovario cylindrico, usque ad 2 mm. longo.

Epiphytic, small, caespitose plants, up to 3 cm. tall. Roots filiform, flexuous, glabrous. Secondary stem short, completely enclosed by imbricating, tubular sheaths. Leaves fleshy, linear-ob lanceolate, up to 3 cm. long and 2 mm. wide. Peduncle slender, one-flowered, up to 2 cm. long. Bracts tubular, up to 3.5 mm. long. Flowers yellow. Sepals are united into a dorsally ventricose, somewhat arcuately curved tube 6 mm. in length, free portions spreading, triangular-lanceolate, subacuminate, up to 5 mm. long and 1 mm. wide. Petals obliquely spathulate, obtuse, obscurely apiculate with an obscurely subglobose callus near the middle of the anterior lobe, up to 2 mm. long and 0.8 mm. wide. Lip linear-oblong, subtruncate in front with a pair of longitudinal, puberulent ridges, up to 2.5 mm. long and 0.8 mm. wide. Column short, clavate, up to 2 mm. long. Ovary cylindric, up to 2 mm. long.

**Venezuela:** Curimagua, Sierra de San Lúis, GARCIA s.n. sub DUNSTERVILLE 538! (AMES).

**Masdevallia trioon** Sweet, *sp. nov.*

Type: Ecuador; Condor, FISKE s.n.! (AMES)

Epiphytica, perpusilla, caespitosa, usque ad 4 cm. alta; radicibus filiformibus, flexuosis, glabris; caulis secundariis vix ullis, vaginis tubulosis, 2, omnino obtectis, usque ad 2 mm. longis; foliis linearispathulatis, obtusis, basin versus angustatis, usque ad 4 cm. longis, 3 mm. latis; pedunculo filiformi, unifloro, usque ad 1.5 cm. longo; bracteis tubulosis, usque ad 3 mm. longis; floribus luteis; sepalis dorsaliter ventricosis, usque ad 6 mm. longis, lobis liberis patentibus, ovatis, obtusis, inde nomen, usque ad 2 mm. longis, 1.6 mm. latis; petalis e cuneata basi oblongo-ellipticis, acutis, margine anteriori callo globoso decora, usque ad 3 mm. longis, 1 mm. latis; labello e cuneato-subquadrata basi 3-lobo, lobis lateralibus falcato-triangulari-

bus, lobo terminali rectangulariter-oblongo, recurvo, margine integro, toto labello, usque ad 3 mm. longo, 1 mm. lato; columna erecta, usque ad 3.5 mm. longa; ovario cylindrico, usque ad 3.5 mm. longo.

Epiphytic, small, caespitose plants, up to 4 cm. tall. Roots filiform, flexuous, glabrous. Secondary stem hardly any, completely enclosed by two tubular sheaths, up to 2 mm. long. Leaves linear-spathulate, obtuse, tapering to base, up to 4 cm. long and 3 mm. wide. Peduncle filiform, one-flowered, up to 1.5 cm. long. Bracts tubular, up to 3 mm. long. Flowers yellow. Sepals united into a dorsally ventricose, inflated tube, up to 6 mm. long, free lobes spreading, ovate, obtuse, up to 2 mm. long and 1.6 mm. wide. Petals from a cuneate base oblong-elliptic, acute, along anterior margin below middle provided with a small, globose callus, up to 3 mm. long and 1 mm. wide. Lip from a cuneate-subquadrate base 3-lobed; lateral lobes falcate-triangular; midlobe rectangular-oblong, recurved with entire margin; whole lip up to 3 mm. long and 1 mm. wide. Column erect with a short foot, up to 3.5 mm. long. Ovary cylindric, up to 3.5 mm. long.

**Ecuador:** Condor, FISKE s.n.! (AMES).

**Masdevallia venezuelana** Sweet, sp. nov.

Type: Venezuela; Rancho Grande, PITIER 13966! (AMES).

Epiphytica, caespitosa, usque ad 10 cm. alta; radicibus fasciculatis, filiformibus, flexuosis, glabris; caulis secundariis abbreviatis, vaginis tubulosis omnino obtectis, usque ad 6 mm. longis; foliis carnosis, oblanceolato-spathulatis, obtusis, basin versus in petiolo angustatis, usque ad 6 cm. longis, 8 mm. latis, vulgo minoribus; pedunculo gracili, unifloro, usque ad 8 cm. longo; bracteis tubulosis, pedicellis aequilongis, usque ad 5 mm. longis; floribus citrinis vel aurantiacis, satis magnis; sepalis dorsaliter ventricosis, 10 mm. longis, lobis liberis linearri-oblongis, obtusis vel rotundatis, usque ad 10 mm. longis, 2 mm. latis; petalis hyalinis, linearibus, apicem versus paululo dilatatis, subtruncatis, in medio apiculatis, margine anteriori callo cariniformi ornata, usque ad 3 mm. longis, 0.5 mm. latis;

labello luteo, linear, parte basali carnosa, excavata, in medio marginis in disco decurrentibus, parte apicali membranacea, oblongo-linear, apice erosa, toto labello usque ad 3.5 mm. longo, 1 mm. lato; columna erecta, cylindrica, usque ad 2 mm. longa, ovario cylindrico, sulcato, usque ad 2 mm. longo.

Epiphytic, caespitose plants, up to 10 cm. tall. Roots fasciculate, filiform, glabrous. Secondary stem short, completely enclosed by tubular sheaths, up to 6 mm. long. Leaves fleshy, oblanceolate-spathulate, obtuse, tapering to a distinct petiole, up to 6 cm. long and 8 mm. wide, commonly smaller. Peduncle slender, one-flowered, up to 8 cm. long. Bracts tubular, as long as the pedicel, up to 5 mm. long. Flowers lemon-yellow to golden yellow, large for the section. Sepals connate into a dorsally ventricose tube, 10 mm. in length, free parts linear-oblong, obtuse to rounded at apex, up to 10 mm. long and 2 mm. wide. Petals hyaline, linear, somewhat expanded at apex, subtruncate, apiculate in middle, the anterior margin with a long, fleshy keel, up to 3 mm. long and 0.5 mm. wide. Lip yellow, linear, basal half fleshy, excavate, with the margins decurved in middle onto the disc; apical half membranaceous, oblong-linear with erose apex, up to 3.5 mm. long and 1 mm. wide. Column erect, cylindric, with a distinct foot, up to 2 mm. long. Ovary cylindric, sulcate, up to 2 mm. long.

**Venezuela:** Rancho Grande PITTIER 13966! (AMES, US), DUNSTERVILLE 528! (AMES), STEYERMARK 89793! (AMES, VEN), PITTIER 11820! (AMES, G, US).

PLATE 8



A



B



C

Plate 8. A. *Masdevallia gnoma* Sweet. B. *Masdevallia kyphonantha* Sweet.  
C. *Masdevallia pseudominuta* Sweet.

PLATE 9

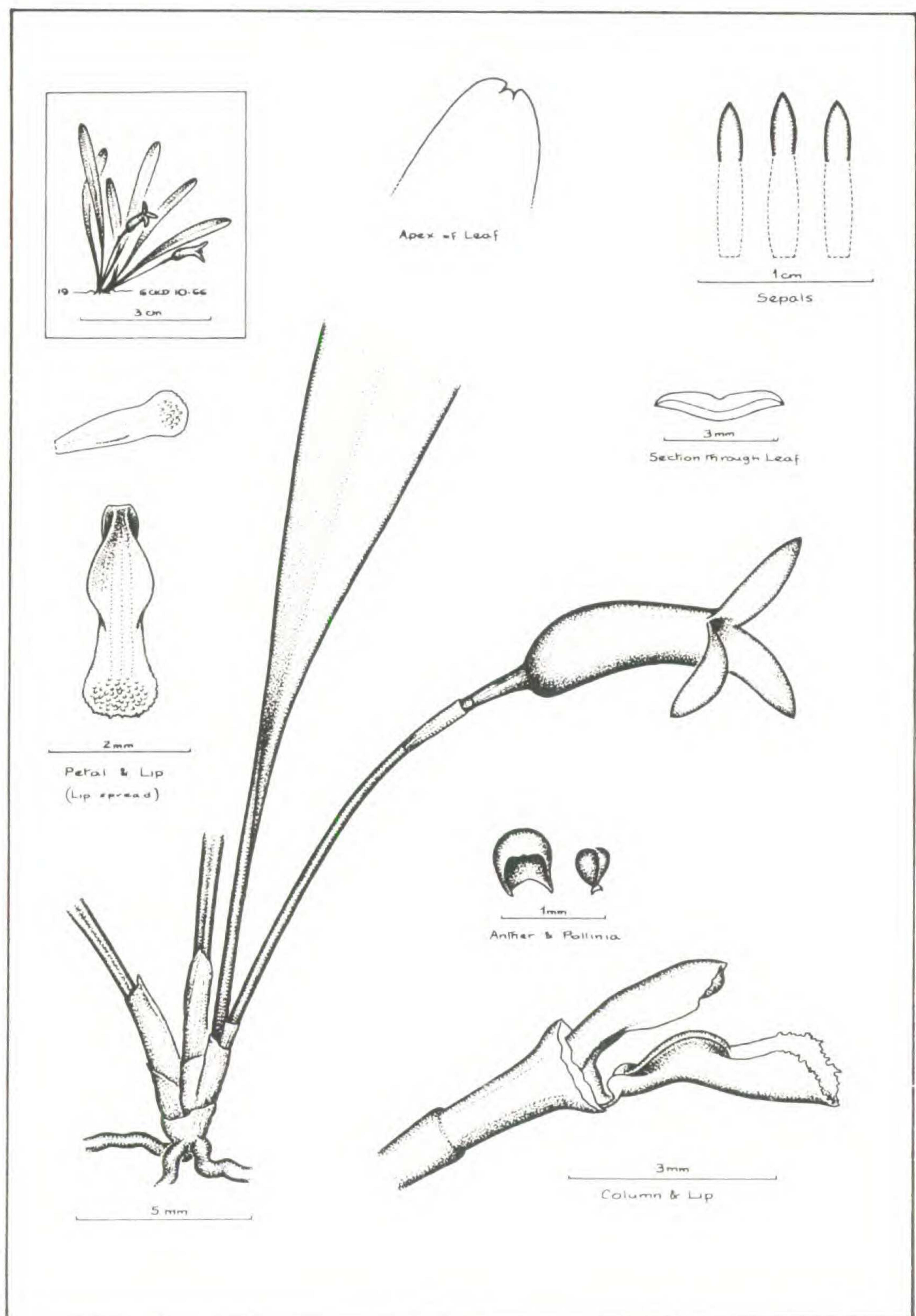


Plate 9. *Masdevallia irapana* Sweet.

PLATE 10

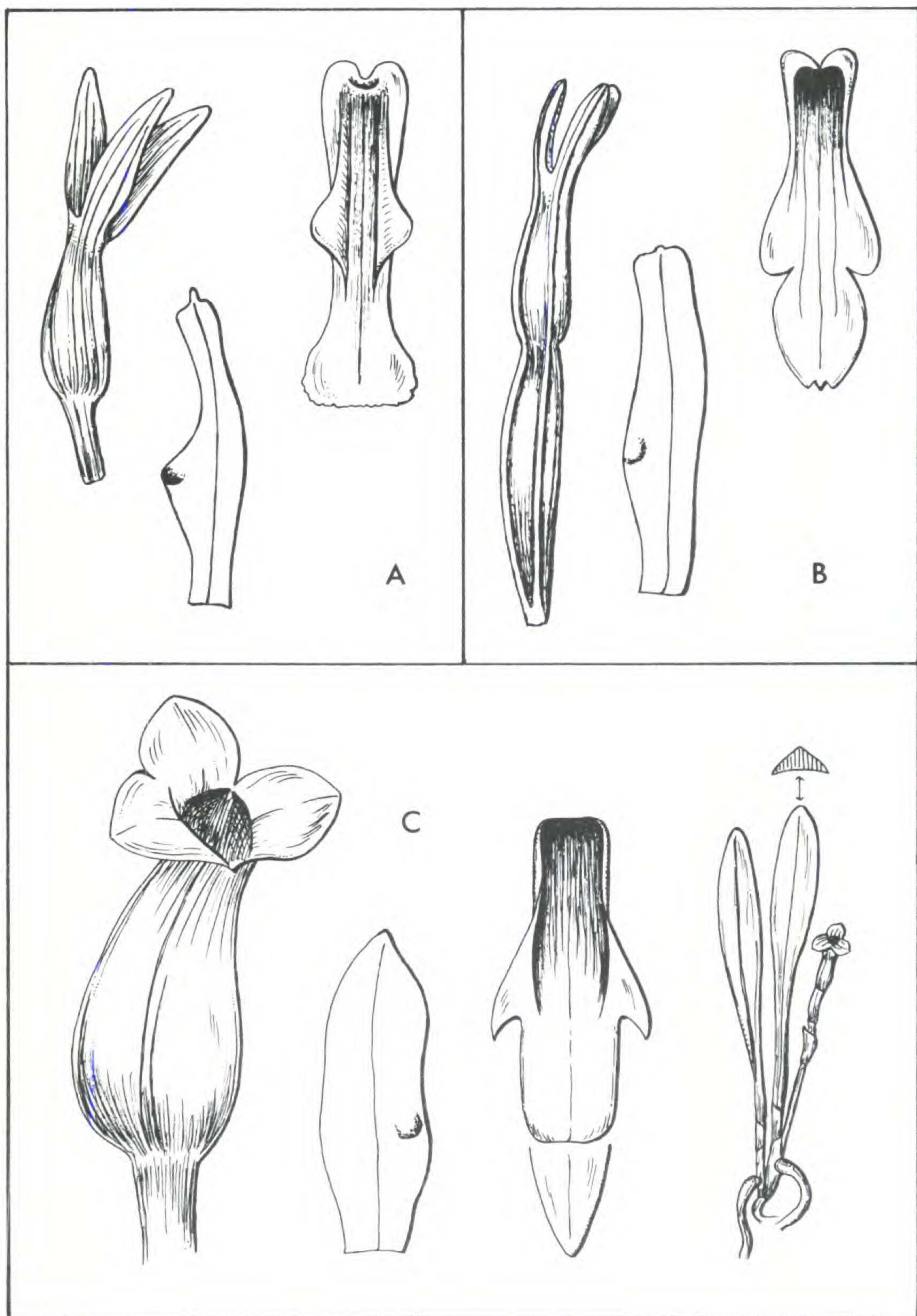


Plate 10. **Masdevallia gnoma** Sweet. B. **Masdevallia Bangii** Schltr.,  
C. **Masdevallia trioon** Sweet.

PLATE 11

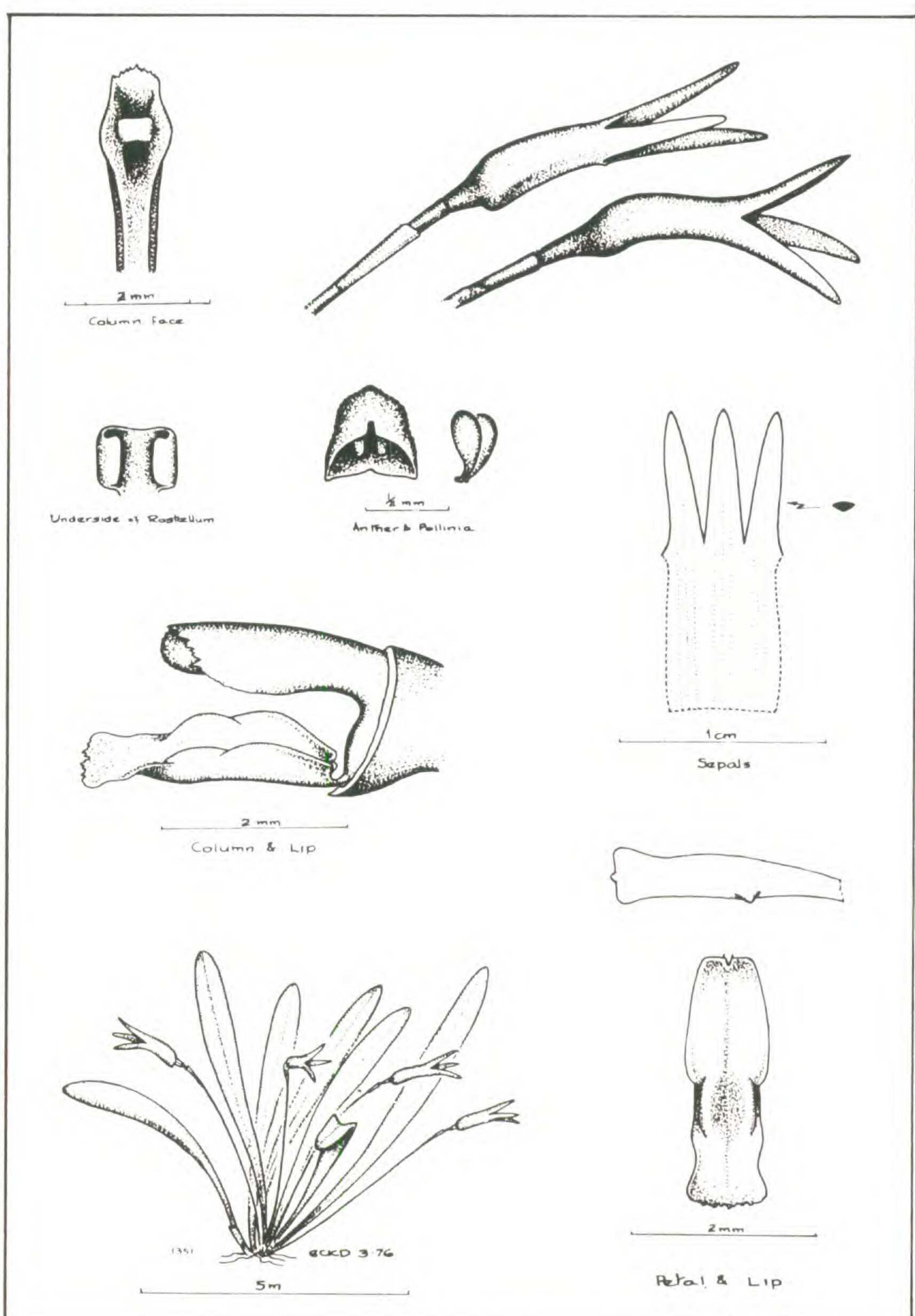


Plate 11. *Masdevallia Lansbergii* Rchb.f.

PLATE 12

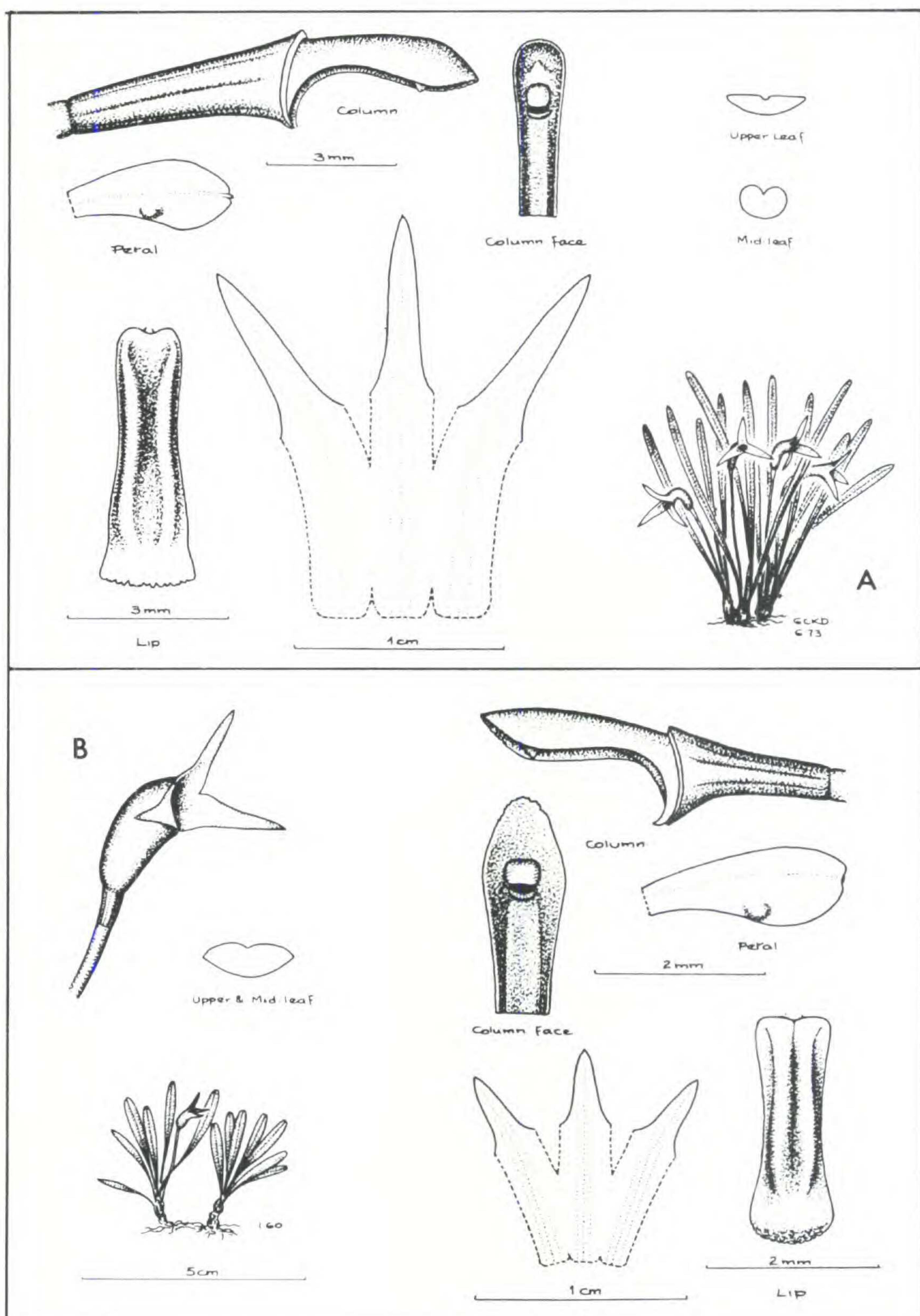


Plate 12. A. *Masdevallia kyphonantha* Sweet. B. *Masdevallia pseudominuta* Sweet.

PLATE 13

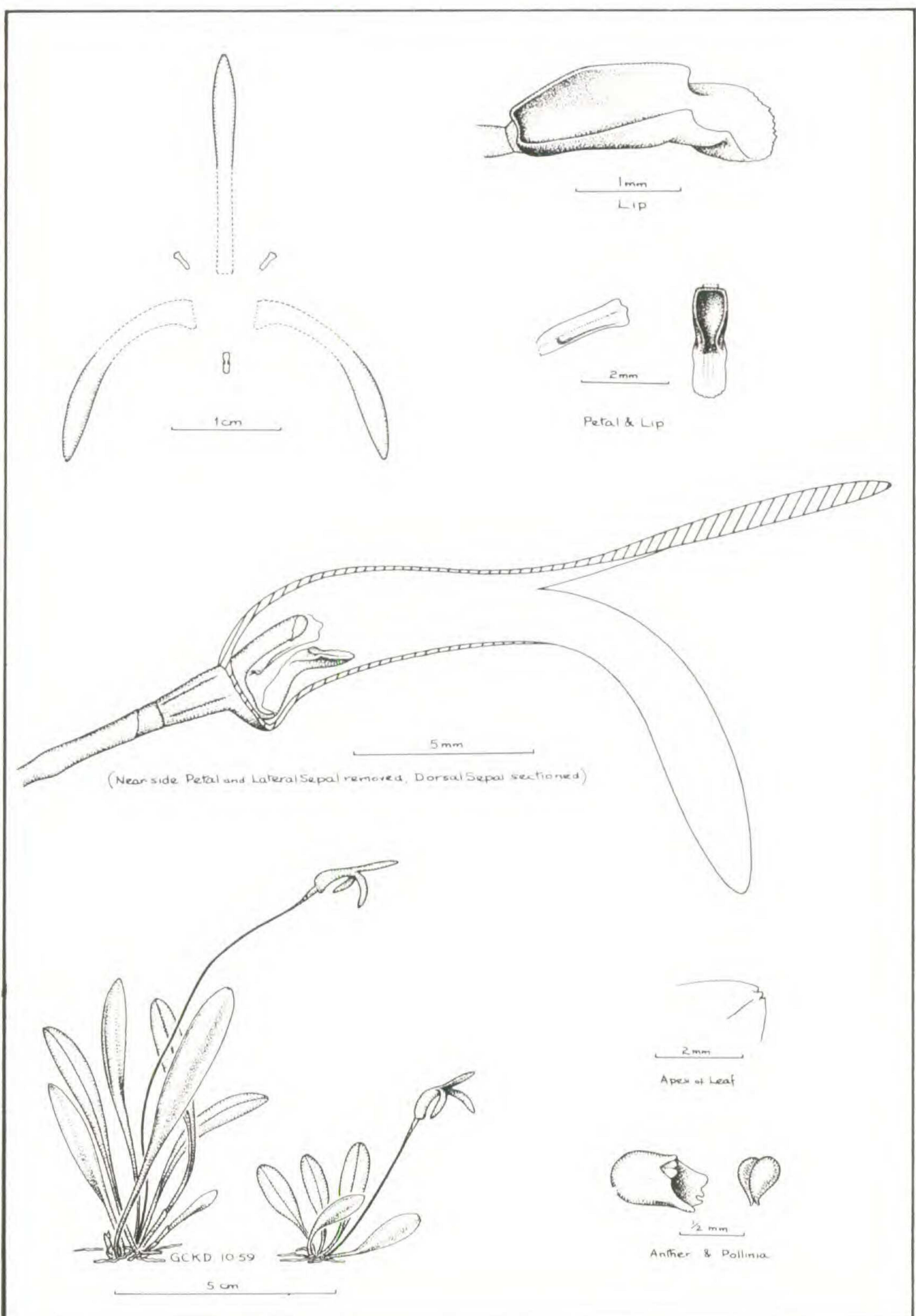


Plate 13. *Masdevallia venezuelana* Sweet.